

BRUCKNER, J.

"The objective of the projector." Pt. 4, p. 31

KEP ES HANGTECHNIKA (Optika es Kinotechnikai Tudomanyos Egyesulet)  
Budapest, Hungary, Vol. 5, No. 1, Feb. 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 6, June 1959  
Uncl.

BRUCKNER, J.

"Optical-means slide projection in motion-picture theaters." p. 62

KEP ES HANGTECHNIKA (Optikai es Kinotechnikai Tudomanyos Egyesulet)  
Budapest, Hungary, Vol. 5, No. 2, Apr. 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 6, June 1959  
Uncl.

BRUCKNER, J.

Optical instruments of motion-picture projection. II. p.153

KEP ES HANGTECHNIKA. (Optikai és Kinotechnikai Tudományos Egyesület)  
Budapest, Hungary  
Vol. 5, no.5, Oct. 1959

Monthly List of East European Accessions (EEAI) 1C., Vol. 8, no.12, Dec. 1959  
Uncl.

BRUCKNER, Janos

Optical instruments of motion-picture projections Pt.III. Kep  
hang 5 no.6:189-190 '59 (REAI 9:3)  
(Optical instruments) (Motion pictures)

BRUCKNER, Janos

Optical means of diapositive production at motion picture theaters.  
II. Kep hang 5 no.5:153-154 0 '59,

BRUCKNER, Janos

The objective of projectors. Pt. 4. Kep hang 5 no.1:31 F '59.

BRUCKNER, Janos

Optical means of diapositive projection at motion picture theaters.  
Pt.3. Kep hang 5 no.6:189-190 D 159.

BRUCKNER, L., doc.dr., CSc., CROW, J. MUDr.; FAJMANOVA, L.; RUBACKOVA, J.

Previous experiences with dispensary treatment and screening  
of precancerous conditions in the northern Moravian region.  
Cesk. zdrav. 11 no.12:508-513 D'63.

1. Onkologicke oddeleni Krajske nemocnice s poliklinikou v  
Ostrave 3 - Paskov; Okresni onkologicka poradna v Ostrave.

\*

CZECHOSLOVAKIA

UDC 616.24-003.65(:674.8)-057(677.022)

NAVRATIL, Miroslav; HAJICKOVA, Vera; BRUCKNER, Jaroslav; SEDIVEC, Jiri; Institute of Work Hygiene and of Occupational Diseases (Ustav Hygieny Prace a Chorob z Povolani), Prague, Director (Reditel) Dr J. TEISINGER; Okresni Station of Hygiene and Epidemiology (Hygienicko-Epidemiologicka Stanice), Liberec, Director (Reditel) Dr J. MARECEK; Department of Occupational Diseases, Okresni Institute of National Health (Odd. Chorob z Povolania OUNZ), Liberec, Head (Vedouci) Dr J. BRUCKNER.

"Problem of Byssinosis in Cotton Mill Workers."

Prague, Pracovni Lekarstvi, Vol 18, No 6 - 7, Aug 66, pp 247-253

Abstract /Authors' English summary modified/: Employees of 2 cotton mills who were exposed to cotton dust for more than 5 years were examined. Byssinosis was found only exceptionally; in one mill chronic bronchitis was found in 29.5% of the employees, in the other in 23.5%. The usual bacteria and mycotic flora were found in the patients. Skin tests with allergens were made; some dust reactions were observed. 6 Figures, 3 Tables, 14 Western, 7 Czech, 1 Russian reference. (Manuscript received 20 Dec 65).  
1/1

EXCERPTA MEDICA Sec 14 Vol.10/3 Radiology Mar 56

495. BRÜCKNER L. \*Diagnosing large intestine with the aid of X-rays (Czech text) CSL. ROENTGENOL. 1955, 9/2 (65-69)  
The author offers a survey of complementary methods of examining the large intestine, and summarizes the advantages and drawbacks of both methods. The fact is stressed that neither the 1% tannin nor Fischer's method should tempt the physician to abandon the stereotype film because of the seeming facility. Many false conclusions are drawn from skiagrams. The examination technique should be selected individually, and deviations from the most physiological examination method should be avoided as much as possible.

Brückner - Ostrava

Sentralniho roentgenu OUNZ v Novem Jicine, primar MUDr J. Okenka.

BRUCKNER, LADISLAV

HENDRYCH, Vaclav, MUDr., BRUCKNER, Ladislav, MUDr.

Eosinophilic infiltration of the gastric wall. Rozhl. chir. 36 no.4:  
260-264 Apr 57.

1. Chirurgicke oddeleni OUNZ, Novy Jicin, prim. MUDr. Ladislav Janovsky,  
a oddeleni centralniho rig OUNZ, Novy Jicin, prim MUDr Jan Okenka.  
(EOSINOPHILIA,  
infiltrative of gastric wall (Cz))  
(STOMACH, dis.  
infiltrative eosinophilia of gastric wall (Cz))

BERGER, K.; BRUCKNER, L.; FAJMANOVA, L.; JARONOVÁ, L.

Oncological statistics in the Ostrava region. Cesk. zdravot. 6 no.8:  
454-456 Aug 58.

1. Krajska zdravotnicka statistika v Ostrave Onkologicke oddeleni KUMZ  
Ostrava V. v Praskova.  
(NEOPLASMS, statist.  
in Czech. (Cz))

ROSMANITH, Jindrich, Dr.; BRUCKNER, Ladislav, Dr.

Silicotic calculosis in miners at Ostrava. Pracovni lek. 10 no.2:122-125  
May 58.

1. Oddeleni chorob z povolani KUNZ v Ostrave, ved. lekar: MUDr J. Rosmanith  
Onkologicke oddeleni KUNZ v Ostrava-Paskove, prednosta: primar MUDr. B.  
Raffersberg. J. R., Ostrava I., Sokolska 5.

(SILICOSIS, complications  
calcifications in miners, case reports (Cz))

CZECHOSLOVAKIA/General Problems of Pathology - Tumors.  
Human Tumors.

U.

Abs Jour : Ref Zhur - Biol., № 2, 1959, 8910

Author : Brückner, Ladislav  
Inst : -  
Title : Malignant Melanoma

Orig Pub : Rozhl. chirurg., 1958, 37, № 6, 399-406

Abstract : The results are reported of the treatment of 43 patients with skin melanomas. Satisfactory results of surgical removal of the tumor with subsequent actinotherapy are noted.

Card 1/1

BRUCKNER, L., MUDr.; FAJMANOVA, L.; KLOSTERMANOVA, D.; BERGER, K.; JARONOVÁ, L.

Statistics on the assistance in control of oncological diseases.  
Cesk. zdravot 7 no.5:265-269 June 59.

1. Onkologicke oddeleni KUNZ Ostrava V. v Paskove Krajska zdravotnicka  
statisticka sluzba v Ostrave.  
(NEOPLASMS, prev. & control  
in Czech. (Cz))

ROSMANITH, Jindrich; BRUCKNER, Ladislav

Bronchography in a simple form of pneumoconiosis and its comparison  
with clinical and functional findings. Pracovni lek. 11 no.9:451-  
457 N '59.

1. Oddeleni chorob z povolani KUNZ v Ostrave, ved.lekar MUDr.  
Jindrich Rosmanith. Onkologicke oddeleni KUNZ v Ostrave-Paskove,  
prednosta primar MUDr. B. Raffersberg.  
(PNEUMOCONIOSIS diag.)

BRUCHNER, Ladislav

Micro-focus bronchograms. Cesk. rentg. 13 no.4:224-228 Aug 59.

1. Onkologické oddelení KUNZ v Ostrave V - Paskové, prednosta prim.  
MUDr. B. Raffersberg.  
(BRONCHI, radiogr.)

BRUCKNER, L.; STEPANEK, Pinos

Practical utilization of the technic of direct x-ray augmentation.  
Cesk. rentg. 13 no.4:242-248 Aug 59

1. Onkologicke oddeleni KUNZ v Ostrave V, Paskove, prednosta prim.  
MUDr. B. Raffersberg Rentgenologicke oddeleni KUNZ v Ostrave V,  
prednosta prim. MUDr. J. Metelka.  
(RADIOGRAPHY)

BRUCKNER, L.; MAUTNER, B.

Early diagnosis of lung cancer with special reference to abrheography.  
Cas. lek. cesk. 98 no.3:85-89 16 Jan 59.

1. Onkologicke oddeleni KUNZ Ostrava-Zabreh v Paskove, prednosta prim.  
MUDr. B. Raffersberg Oddeleni chorob z povlani KUNZ Ostrava, ved. lekar  
MUDr. J. Rozmanith. L. B. Paskov u Ostravy.

(LUNG NEOPLASMS, diag.  
electrical impedance plethysmography for early diag., ad-  
vantages & disadvantages (Cz))

(PLETHYSMOGRAPHY, in various dis.  
cancer of lung. diag. value of electrical impedance plethys-  
mography (Cz))

ROSMANITH, J., BRUCKNER, L.

Contribution to the problem of silico-arthritis. Cesk.rentg. 14  
no.1:35-43 F '60.

1. Oddeleni chorob a povolani KUNZ, Ostrava I, vedouci lekar MUDr.  
J. Rosmanith; onkologické oddelení KUNZ v Ostravě-Paskově, prednosta  
prim. MUDr. B. Raffersberg.  
(SILICOSIS pathol.)  
(JOINTS pathol.)

BRUCKNER, L.; PINOS, L.

Hard exposure technic in routine roentgen pulmonary diagnosis.  
Cesk. rentg. 14 no.2:76-82 Ap '60.

1. Onkologicke oddeleni KUNZ v Ostrave-Paskove, prednosta prim.  
MUDr. Raffersberg Centralni rentgen KUNZ v Ostrave, predn.  
prim. MUDr. Metelka.  
(LUNGS radiogr.)

BRUCKNER, L.; ROSMANITH, J.

Articular changes in workers operating pneumatic tools. Cesk.  
rentg. 14 no. 4:269-277 Ag'60.

1. Onkologicke oddeleni KUNZ-Ostrava v Paskove, prednosta MUDr.  
B. Raffersberg. Oddeleni chorob z povolani KUNZ-Ostrava, vedouci  
lekar MUDr. J. Rosmanith.

(JOINTS dis)

(VIBRATION)

(OCCUPATIONAL DISEASES)

BRUCKNER, L.; MOSLER, J.; TOMAS, J.; CERNY, J.; BESKA, F.

X-ray picture of the urinary bladder in gynecological carcinoma.  
Cesk.rentg.14 no.6:390-395 D'60.

1. Onkologicke odd. KUNZ-Ostrava v Paskove, prednosta MUDr.  
B. Raffersberg.

(BLADDER radiog)  
(GENITALIA FEMALE neopl)

MOSLER, Jiri; BRUCKNER, Ladislav

X-ray of the ureters and kidneys in cancer of the genitalia.  
Cesk.gyn.25[39] no.8:591-596 0'60.

1. Onkologické oddelení KUNZ, Ostrava, v Paskově, prednosta  
MUDr. B. Raffersberg.  
(URETER radiography)  
(KIDNEY radiography)  
(GENITALIA FEMALE neoplasms)

BRUCKNER, Ladislav; EISLER, Ladislav; ROSMANITH, Jindrich

Development and diagnostic possibilities of chronic forms of Bang's disease. Prac. lek. 13 no.8/9:395-399 N '61.

1. Oddeleni chorob z povoleni krajske nemocnice s poliklinikou v Ostrave, prednosta MUDr. J. Rosmanith Onkologicke oddeleni krajske nemocnice s poliklinikou v Ostrave, prednosta MUDr. B. Raffersberg.

(BRUCELLOSIS BOVINE diag)

PESKA, F.; BRUCKNER, L.; CERNY, J.

The kymographic picture of gastric changes in radiation injury.  
Cesk. gastroent. vyz. 15 no.1:61-63 F '61.

1. Onkologicke oddeleni KUNZ - Ostrava V. v Paskove, prednosta prim.  
MUDr. B. Raffersberg.  
(RADIATION INJURY pathol.) (STOMACH radiation effects)  
(KYMOGRAPHY)

BRUCKNER, L.; MOSLER, J.; CERNY, J.; BESKA, Fr.; REK, O.

Changes in the large intestine after irradiation in gynecological cancer. Cesk. rentgenol. 15 no.5:334-343 0 '61.

1. Onkologicke oddeleni KUNZ Cstrava v Paskove, prednosta prim.  
MUDr. B. Raffersberg.  
(GENITALIA FEMALE neoplasms)  
(INTESTINE LARGE radiation eff.)

BRUCKNER, Ladislav; BESKA, Frantisek; MOSLER, Jiri; TOMAS, Jaroslav

The kidneys and ureters in carcinoma of the rectum and sigmoid.  
Roshl. chir. 40 no.12:844-850 '61.

1. Onkologicke oddeleni KUNZ Ostrava v Paskove, prednosta MUDr,  
B.Raffersberg.  
(RECTUM neoplasms) (SIGMOID neoplasms)  
(KIDNEY radiography) (URETER radiography)

BRUCKNER, L.

SURNAME, Given Name

(3)

Country: Czechoslovakia

Academic Degrees: MD

Oncological Department KUNZ /Krajsky ustav narodniho zdravi; Krajsky Institute of Public Health/, Ostrava V, Station in Paskov (Onkologické oddelení KUNZ, Ostrava V, pracoviste Paskov); Director:

Sources: RAFFERSON, MD.

Prague, Prakticky Lekar, Vol 41, No 10, 1961, pp 470-472.

Data: "Skin Reaction Therapy Following Contact X-Ray Treatment."

Authors: BESKA, F.

BRUCKNER, L.

262

680 98143

BRUCKNER, L.

Melanoma and their treatment. Bratisl. Lek. Listy 1 no.3:157-164  
'62.

1. Z onkologickeho oddeleni Krajske nemocnice s poliklinikou v Ostrave  
v Paskove, prednosta prim. MUDr. B. Raffersberg.

(MELANOMA ther)

ROSMANITH, Jindrich; BRUCKNER, Ladislav

Caplan's syndrome in coal miners in the Ostrava-Karvina basin. Prac.  
lek. 14 no.2:70-75 Mr '62.

1. Odd. chorob z povolani a onkologicke odd. krajske nemocnice s  
poliklinikou KUNZ v Ostrave.

(SILICOSIS compl)  
(ARTHRITIS RHEUMATOID compl)

BRUCKNER, Ladislav; MAUTNER, Bedrich

Unilateral pulmonary dystrophy and pneumoconiosis. Pracovni lek.  
14 no.4:162-169 My 62.

1. Krajska nemocnice s poliklinikou, Ostrava, oddeleni chorob z  
povolani, Ostrava 1, prednosta MUDr. J.Rosmanith a onkologicke  
oddeleni, Paskov, prednosta MUDr. B.Raffersberg.  
(PNEUMOCONIOSIS pathol)

TYPOVSKY, K.; BRUCKNER, L.; DOLECEK, R.; KOZIEL, M.; STEPANEK, Vl.

Metastases of breast cancer to bones and lungs and their responses to adrenalectomy. Cesk. rentgenol. 16 no.2:100-105 Ap '62.

1. Chirurgicke oddeleni Krajske nemocnice s poliklinikou v Ostrave, prednosta doc. MUDr. K. Typovsky, CSc. Onkologicke oddeleni Krajske nemocnice s poliklinikou v Ostrave, prednosta MUDr. B. Raffersberg Interni oddeleni Krajske nemocnice s poliklinikou v Ostrave, prednosta MUDr. J. Cerny.

(BREAST NEOPLASMS surg) (BONE AND BONES neopl)  
(LUNG NEOPLASMS surg) (ADRENALECTOMY)

CERNY, Jindrich; BRUCKNER, Ladislav; BESKA, Frantisek

Our experiences with the cobalt irradiation apparatus GUT-Co-400-2.  
Cesk. rentgenol. 16 no.4:278-283 Ag '62.

1. Onkologicke oddeleni v Paskove -- KNsP Ostrava, prednosta dr  
B. Raffersberg.  
(COBALT radioactive) (RADIOTHERAPY equip & supplies)

BRUCKNER, Ladislav

A rare form of bone sarcoma. Acta chir. orthop. trauma. Czech. 28  
no.2:89-95 Ap '62.

1. Onkologicke oddeleni KUNZ Ostrava V v Paskove, prednosta prim.  
MUDr. B. Raffersberg.  
(SARCOMA case reports) (BONE AND BONES neopl)

BRUCKNER, Ladislav

CZECHOSLOVAKIA

MD

Oncological Department of KUNZ, Ostrava 3 - Paskov;  
Director: B. Raffensberg

Prague, Prakticky Lekar, No. 18, 1962, pp 788-790

"Contribution to Problems of Working Disability of  
Oncological Patients"

Co-author:

→ CRON, Jan, MD, Chief Physician, District Onco-  
logical Advice Bureau (Okresni onkologicka poradna),  
Ostrava

BRÜCKNER, L.

CZECHOSLOVAKIA

MD

Not given

Prakticky Lekar (Prague), No. 18, 1962, pp 805-806

Commentary to article by J. Spicka, MD: "Care for Oncological Patients Treated at Home" (Prakticky Lekar, No. 12, 1962)

Co-author:

→ CRON, J., Md.

CZECHOSLOVAKIA

BRUCKNER, L; PAUK, J.

Oncological Department of the Kraj Hospital and Polyclinic  
(Onkologicke oddeleni Krajske nemocnice s poliklinikou),  
Ostrav-Paskov (for both)

Bratislava, Bratislavské lekarske listy, No 8, 1963, pp 477-  
481

"Cylindromas."

BRUCKNER, L.

CZECHOSLOVAKIA

BRUCKNER, L; BALK, J.

Oncological Department of the Kraj Hospital and Polyclinic  
(Onkologické oddelení Krajské nemocnice a poliklinikou),  
Ostrava-Paskov. (for both)

Bratislava, Bratislavské lekarske listy, No 8, 1963, pp 477-481

"Cylindromas."

BRUCKNER, Ladislav

Influence of glycerol-guaiacol-ether upon gastric changes  
after X-ray therapy. Sborn. ved.prac.lek.fak.Karlov.Univ.  
(Hrad.Kral.) 6 no.1:99-100 '63.

1. Onkologicke oddeleni KNaP, Paskov.

\*

BRUCKNER, L., doc. dr., CSc.

Estimation of the incidence of malignant tumors in relation  
to the age structure of the population. Cesk. zdrav. 12 no.6:  
323-326 Je'64

1. Ve spoluprnce s kolektivem ambulantni casti onkologickeho  
oddeleni krajske nemocnice s poliklinikou v Paskove.

BRUCKNER, L. [deceased]; BESKA, F.; CERNY, J.; STEPANEK, V.; POHLIDALOVA, L.;  
KLEGA, J.

Changes of the shoulder joint in mammary carcinoma. Cesk.  
radiol. 19 no. 3:162-168 My '65

1. Onkologicke oddeleni (vedouci: MUDr. B. Raffersberg); patologic-  
koanatomicke oddeleni (vedouci: doc. dr. C. Dvoracek); krajske  
nemocnice s poliklinikou v Ostrave, a Rentgenologické oddeleni  
UNZ v Bohumíne (vedouci: MUDr. V. Stepanek).

BRUCKNER, L. [deceased]; EISLER, L.; ROSMANITH, J.

Contribution to the development of diagnosis in the chronic form of Beng's disease. Acta chir. orthop. traum. Czech. 32 no.2: 157-165 Apr'65.

1. Okologické oddílení krajské nemocnice s poliklinikou v Ostravě-Paskově (vedoucí: MUDr. B. Raffersberg) a Oddílení chorob z povolání krajské nemocnice s poliklinikou v Ostravě (vedoucí: MUDr. J. Rosmanith, CSc.).

BRÜCKNER, L. [deceased]

Destructive forms of pulmonary tumors. Rozhl. chir. 44 no.12:  
793-799 D '65.

1. Onkologicke oddeleni Krajske nemocnice s poliklinikou v Paskove  
(vedouci MUDr. B. Raffersberg).

BRUCKNER, L. [deceased]; BESKA, F.

Radiotherapy of malignant kidney tumors in adults. Analysis of  
507 cases. Cesk. radiol. 19 no.6:386-392 N '65.

1. Onkologicke oddeleni Krajske nemocnice s poliklinikou v Paskove  
(vedouci MUDr. B. Raffersberg).

BRUCKNER, Ladislav [deceased]; BESKA, Frantisek

Metastases of kidney tumors in adults. Vnitrni lek. 11 no.9:  
884-888 S '65.

1. Onkologicke oddeleni KNsP v Ostrave 3 - Paskove (prednosta  
MUDr. Bruno Raffersberg).

BRUCKNER, L. [deceased]; REK, O.

Tumors of the nasopharynx. Cesk. otolaryng. 14 no. 5:296-300  
O ' 65.

1. Onkologicke oddeleni krajske nemocnice s poliklinikou v  
Paskove (vedouci MUDr. B. Raffersberg).

MOSLER, J.; (BRUCKNER, L. [deceased]) BESKA, F.; CERNY, J.

Apropos of post-irradiation changes in the treatment of  
gynecological cancer with the use of cobalt 60. Cesk.  
gynek. 30 no.8:571-575 O '65.

1. Onkol. oddel. kraj. nem. s poliklin. v Paskove (vedouci  
MUDr. B. Raffersberg). Submitted August 7, 1964.

CHROMECK, M.; BRUCKNER, M.

Origin and solution of the problem of draining heavily watered washed gravel sands. Stavivo 41 no. 4:136-138 Ap '63.

1. Tezba sterkopisku, n.p., Olomouc.

LASZLO, Barnabas, dr.; BRUCKNER, Piroska, dr.; GORGELY, Eva, dr.; TOTH, Bela, dr.

Therapy of acute hepatitis patients with oral antidiabetics  
(bucarhan). Orv.hetil. 100 no.39:1411-1413 S '59.

1. A Budapesti Kozegeszsegugyi-Jaroanyugyi Allomas (igazgato:  
Kapos Vilmos dr.) Hepatitis Korhazanak kozlemenye.  
(ANTIDIABETICS ther.)  
(HEPATITIS ther.)

BRUCKNER, Piroska, dr.; FESZLER, Gyorgy, dr.

Revisions of the indications for blood transfusion with special reference to the hazard of hepatitis. Orv.hetil. 101 no.36:  
1268-1270 4 S '60.

1. Budapesti Fovarosi Kozegeszsegugyi-jarvanyugyi Allomas Hepatitis  
Korhazi Osztalya es az Orszagos Vertranszfuzios Szolgatalat  
Kozponti Kutato Intezete  
(BLOOD TRANSFUSION)  
(JAUNDICE HOMOLOGOUS SERUM prev & control)

LASZLO, Barnabas, dr.; BRUCKNER, Piroska, dr.

Effect of sulfonylurea derivatives on the course of acute viral hepatitis. Orv.hetil. 102 no.30:1405-1410 23 Jl '61.

1. Budapest Vaci-uti Hepatitis Korhaz.

(ANTIDIABETICS ther) (HEPATITIS INFECTIOUS ther)

VARGHA, Geza, dr.; BRUCKNER, Piroska, dr.; Technikai munkatarsak: BANYAY,  
Maria; BANKUTI, Mihalyne, dr.

Oxygen saturation of the arterial blood in tuberculous patients.  
Tuberkulozis 15 no.3:69-73 Mr '62.

1. A MAV Tudogyogyintezet (igazgato: Nyiro Jozsef dr.) II Belosztalyanak  
(foorvos: Vargha Geza dr.) es Cardiorespiratorikus Laboratoriumnak  
kozlemenye.

(TUBERCULOSIS PULMONARY blood) (OXIMETRY)

VARGHA, Geza, dr.; BRUCKNER, Piroska, dr.

Bronchoscopiometric Tiffeneau's test. Tuberkulozis 15 no.6:  
164-166 Je '62.

1. A MAV Tudogyogyintezet (Igazgato: Nyiro Jozsef dr.) II. Belosztalyanak  
(Foorvos: Varga Geza dr.) es Funkcioslaboratoriumnak kozlemenye.  
(SPIROMETRY)

"APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307110005-4

BRUCKNER, S.

ELIAS, H.; BRUCKNER, S.; MARINESCU, Gh.

Epidemic hepatitis in children. Stud.cercet.inframicrobiol., Bucur.  
5 no.1-2:23-32 Jan-June 54.

(HEPATITIS, INFECTIOUS, in inf. & child.,  
statist. in Rumania)

APPROVED FOR RELEASE: 06/09/2000

CIA-RDP86-00513R000307110005-4"

BRUCKNER, Silvia, Dr.

Adenoviruses and their role in pathology. Med. int., Bucur.  
9 no.4:498-504 Apr 57.

(VIRUS DISEASES  
adenovirus infect., manifest. & virol.)

BRUCKNER, Silvia, Dr.; TEODORESCU, Tatiana, dr.; TEODORESCU, Geta, dr.;  
TATIDEAN, Cr., dr.; RADULESCU, Alice, dr.; STEREESCU, Lelia, dr.

Clinical and therapeutic aspects of grave staphylococccic infections  
in children. Med. int., Bucur. 9 no.4:581-593 Apr 57.

1. Lucrare efectuata in Clinica de boli contagioase I.M.P. (prof.  
M. Voiculescu).

(MICROCOCCAL INFECTIONS, in inf. & child  
pathol. & ther. of Micrococcus pyogenes infect.)

EXCEPȚIA MEDICUA Sec 4 Vol 12/5 - Med. Micro. May 59

1241. PATHOGENIC STAPHYLOCOCCI IN CHILDREN ADMITTED TO HOSPITAL FOR INFECTIOUS DISEASES AND INCIDENCE OF STAPHYLOCOCCAL ACCIDENTS AFTER ANTIOTIC TREATMENT - Cercetări asupra prezenței de stafilococi patogeni la bolnavii spitalizați cu boli contagioase. Incidența accidentelor stafilococice după antbioterapie - Dănilă P., Bruckner S., Radulescu A., Bricman B., Friedman L., Teodorescu T., Ciurezu V., Spiner F., Taindel Cl., Sterescu L. and Vasiliu P. Clin. de Boli Contag. I. M. F., Spit. 'Colentina', București - MED. INTERN. (București) 1957, 9/12 (1821-1828)  
Tables 3

In 350 children hospitalized for various infectious diseases, the nasal and pharyngeal secretions were studied on admission, during their hospital stay and before discharge, with the following results: (a) On admission 36. 2% carried staphylococcus, which was pathogenic in 2/3 of the cases. The incidence varied with the season, with the maximum in the cold season. (b) During the hospital stay 37% became carriers of Staphylococcus, which was pathogenic in half the cases. Some children became carriers temporarily, but in others the Staphylococcus remained permanently present and proved resistant to the usual antibiotics. (c) The hospital stay caused an increase in the number of carriers of antibiotic-resistant strains (80% of the children had received antibiotics while in hospital).

Nicolaeșco - Bucharest (L, 7, 4)

BRUCKNER, S.

ELIAS, H., (Lecturer); BRUCKNER, S.; MARINESCU, Gh.; BRIKMAN, B.; FRIEDMAN, I.;  
THEODORESCU, T.; SPINNER, P.

Clinical forms of epidemic hepatitis in children, according to age.

Humanian M. Rev. 2 no.1:35-36 Jan-Mar 58.

(HEPATITIS, INFECTIOUS, in inf. & child  
classif. of clin. forms according to age, statist.)

BRUCKNER, Silvia

Changes in iso-agglutinins during epidemic hepatitis. Med. int., Bucur.  
10 no.1:93-100 Jan 58.

1. Teodorescu Tatiana.  
(HEPATITIS INFECTION, blood in  
iso-agglutinin titers)  
(HEMAGGLUTINATION  
iso-agglutinin titer changes during infect. hepatitis)

BRUCKNER, Sylvia

Current status of research in pathology of neurotropic virus diseases.  
Med. int., Bucur. 10 no.4:481-494 Apr 58.

1. Clinica de boli contagiose I.M.F., Bucuresti.

(VIRUS DISEASES

neurotropic, pathol., diag. & epidemiol.)

(NERVOUS SYSTEM diseases

virus dis., pathol., diag. & epidemiol.)

VOICULESCU, M., Prof.; BRUCKNER, Silvia, Assist. Prof.; DAN, B.; LEONESCU, M.; RADULESCU, A.; PREDESCU, I.

Clinical pattern and prognosis of poliomyelitis associated with respiratory disorders in infants. Romanian M. Rev. 4 no.1:55-57 Ja-Mr '60.

1. I.M.F. Clinic for Communicable Diseases of the Colentina Hospital, Bucharest.

(POLIOMYELITIS compl.)  
(RESPIRATORY SYSTEM pathol.)

VOICULESCU,M.,prof.; BRUCKNER,Silvia,conf.; THEODORESCU,Tatiana,dr.;  
LOBEL,Rebecca,dr.

Meningitis with ECHO virus. First case virologically identified  
in the R.P.R. Med..int.,Bucur. 12 no.1:93-95 Ja '60.

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(MENINGITIS etiology)  
(VIRUS DISEASES)

BRUCKNER, Silvia, conf.

The role of viruses in cardiac pathology. Med. inter., Bucur 13 no.3:  
339-345 Mr '61.

1. Lucrare efectuata in Clinica I de boli contagioase, Bucuresti,  
director: prof. M. Vioculescu.  
(VIRUS DISEASES complications) (HEART DISEASES etiology)

BRUCKNER, I., prof.; BRUCKNER, Silvia, conf.

The treatment of complications caused by antibiotics. Med. inter.,  
Bucur 13 no.6:879-884 Je '61.  
(ANTIBIOTICS toxicology)

BRUCKNER, Silvia, conf.; DAN, B., dr.; MARGARIT, Z., dr.; TEODORESCU, Georgeta,  
dr.; LAZĂR, Ecaterina, dr.; DIACONU, S., dr.

Current clinical and epidemiological aspects of diphtheria in collectives.  
Med. intern. 14 no.6:711-714 Je '62.

1. Lucrare efectuata in Clinica I de boli contagioase (director:  
prof. M. Voiculescu).

(DIPHTHERIA) (EPIDEMIOLOGY)

BRUCKNER, Silvia, conf.; TEODORESCU, Tatiana, dr.; IOANESI, Iulia, dr.;  
TEODORESCU, G., dr.; CONSTANTINESCU, S., dr.; COTARCEA, S., dr.;  
ISBASESCU, C., chimiste; GARIBALDI, A.

The role of bacterial superinfection in the evolution of epidemic hepatitis. Med. intern. 14 no.4:423-432 Ap '62.

1. Lucrare efectuata in Clinica de boli infectioase nr. 1, I.M.F.  
(director: prof. M. Voiculescu).

(HEPATITIS, INFECTIOUS) (STAPHYLOCOCCAL INFECTIONS)  
(STREPTOCOCCAL INFECTIONS) (PNEUMONIA) (OTITIS MEDIA)

BRUCKNER, Silvia, conf.; TEODORESCU, Tatiana, dr.; TEODORESCU, Geta, dr.;  
IOANESI, Iulia, dr.; CONSTANTINESCU, Sanda, dr.; COTARCEA, Sofia, dr.;  
IZBASESCUI, Aretia, chemist; GARIBALDI, Anastasia, chemist

Investigations concerning the factors determining the evolution of  
epidemic hepatitis in children. The role of viral superinfections.  
Med. intern. 15 no.2:179-184 F '63.

1. Lucrare efectuata in Clinica de boli contagioase I.M.F., Bucuresti.  
(HEPATITIS, INFECTIOUS) (MEASLES) (MEASLES, GERMAN)  
(CHICKENPOX) (MUMPS) (RESPIRATORY TRACT INFECTIONS)  
(VIRUS DISEASES)

BRUCKNER, Silvia, conf.; TEODORESCU, Tatiana; ZAHARIA, Valeria

Peculiar aspect of some staphylococcal meningitis. Microbiologia  
(Bucur) 6 no.1:31 Ja-F '61.

CIUCA, M., acad.; NESTORESCU, N., prof.; BRUCKNER, Silvia, conf.; POPOVICI, Marcela; ALEXENCO, Ecaterina; SARAGEA, Alice; ELIAN, Marius; MEITERT, Eugenia

Research on fago-bacterial systems in the rhinopharyngeal ecology. Pt.2.  
Microbiologia (Bucur) 6 no.1:54-55 Ja-F '61.

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BRUCKNER, Silvia, conf.; PREDESCU, I., dr.

Current aspects of the clinical diagnosis of the encephalitic syndrome. Microbiologia (Bucur) 9 no.5:389-394 S-0 '64

1. Lucrare efectuata in Clinica I de boli contagioase "Colentina" Institutul medico-farmaceutic, Bucuresti (director: prof. M. Voiculescu).

VOICULESCU, M., Prof.; BRUCKNER, Silvia, conf.; PREDESCU, I. dr.; TANDEL,  
Cl., dr.; MARINESCU, Gh., dr.; CIUGARIN, Maria, dr.; COTARCEA,  
Sofia, dr.; PAUN, L. dr.; HOTNOG, Eugenia, dr.; MANITU, Mindruta, dr.

Corticoid hormones in the therapy of neurological virus infections. Indications and results. Med. intern. (Bucur) 10 no.5:  
581-589 My'64.

1. Lucrare efectuata in Clinica de boli contagioase nr.1, I.M.F.  
[Institutul medico-farmaceutic], Bucuresti.

BRUCKNER, Silvia, conf.; IOANESI, Iulia, dr.; RUSU, V., dr.; DRAGOIU,  
Tatiana; POPESCU, Manuela

Acute meinigitis produced by germs of the group Acinetobacter  
(Moraxella). Med. intern. (Bucur.) 16 no.8:991-998 Ag '64.

1. Lucrare efectuata in Clinica de boli contagioase nr. 1,  
Institutul medico-farmaceutic, Bucuresti si Institutul de  
seruri si vaccinuri "Dr. I. Cantacuzino".

BRUCKNER, Silvia, conf.

New acquisitions in infectious diseases. Pediatria (Bucur)  
14 no.2:101-110 Mr-Ap'65.

1. Clinica I de boli infectioase, Institutul medico-farmaceutic,  
Bucuresti.

INFECTIOUS DISEASES

RUMANIA

616.931

BRUCKNER, Silvia, Lect. Work performed at the "Colentina" Hospital  
(Spitalul "Colentina").

"Considerations on the Clinical Nature and Therapy of Present-Day  
Diphtheria."

Bucharest, Microbiologia, Parazitologia, Epidemiologia, Vol 11,  
No 4, Jul-Aug 66, pp 367-372.

Abstract: An analysis of 280 cases of diphtheria treated during  
the past 10 years at the "Colentina" Hospital. The average mor-  
tality rate of 12.85 percent was due mostly to cases which were  
hospitalized too late. The patients had mostly been completely  
or partially vaccinated in the past, and a variety of therapeutic  
methods were used.

Includes one table and 15 references, of which 4 Rumanian,  
3 Russian, 6 German and 2 Western. -- Manuscript submitted 26  
April 1966.

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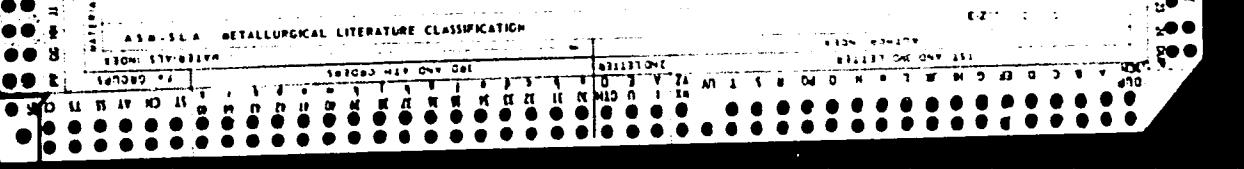
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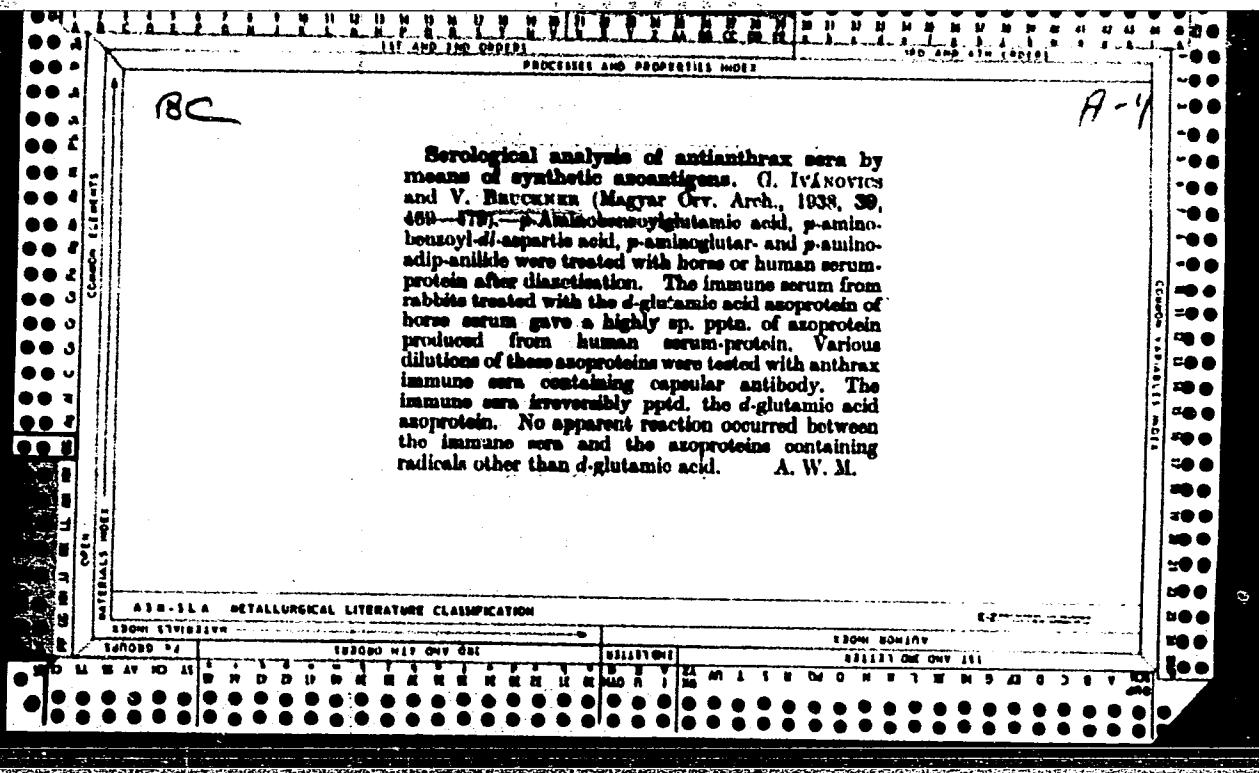
*(A)*

Microchemical determination of methyl. VIKTOR BRUNNEN. Mikrochemie 12, 153 (1932).—Weighing the substance in an capillary should be avoided. A glass cup is described which is more suitable. The introduction of a wad of Sn foil to facilitate uniform boiling is advantageous. The sample should be completely dissolved before adding III. Since phenol alone does not always dissolve the substance, the addition of Acet, or propionic anhydride, is to be recommended. For 0.1 g. of sample, use 0.1 g. phenol and 0.1 cc. Acet. A glass filtering crucible is to be preferred to an asbestos filter. The results obtained in the analysis of some 24 different substances are given together with other comments on the procedure. W. T. H.

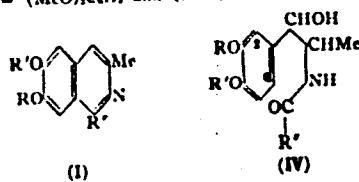
4

The electrolytic reduction of the aliphatic nitro group  
 V. Bruckner, A. Krámlík and E. Vinkler. *Acta Lit. Sci.  
 Regiae Univ. Hung. Francisco-Josephinae, Sect. Chem.,  
 Mineral. Phys.* **6**, 145-50 (1938). --A Cu or Pb tube closed  
 at its lower end serves as a cathode. It is contained in a  
 porous clay cell filled with the catholyte (soln. of the nitro  
 compd. in a mixt. of glacial acetic acid, alc. and concd  
 HCl). This porous cell is surrounded by the anode (a  
 cylindrical Pb sheet or Pt wire) in a beaker filled with the  
 anolyte (20% H<sub>2</sub>SO<sub>4</sub>). The amount of anolyte is sufficient  
 to maintain the same level in both parts of the app. To  
 effect reduction to hydroxylamine deriv., the following  
 conditions are proposed: (a) technical Pb or Cu as a cath-  
 ode, (b) room temp. of the catholyte, (c) c. d. of 0.03 4  
 amp. per sq. cm. of cathode surface and (d) a max. of 1.3  
 times theoretical value of the current. To reduce to amine  
 the conditions are: (a) pure Pb as cathode, (b) temp. of  
 catholyte 50-60°, (c) c. d. 0.07 amp. per sq. cm. of cathode  
 surface and (d) 2-2.5 times the theoretical current. The  
 reaction product usually is isolated by neutralization of the  
 soln. with a satd. aq. soln. of NaONa and evapn. under  
 low pressure not over 50° to 0.1 the vol. The exptl. data  
 show good yields.  
 S. S. de Finally





Determination of the Constitution of some synthetic isoquinolines. Closure of the isoquinoline ring. Viktor Brückner, Józef Kovács, and Károly Kovács (University of Szeged, Ungarn). *Ber.* 77B, 610-17 (1944).—Pfeiffer, Breitbach, and Schöll (*C.A.* 34, 2383), by processes involving many steps, converted brasolin and hematoporphyrin into what they considered to be 3-methyl-1-aryl-0,7-dimethoxyisoquinolines ( $I$ ,  $R = R' = \text{Me}$ ,  $R' = 2,4-\text{HO}(\text{MeO})\text{C}_6\text{H}_3$ , and  $2,3,4,11\text{-HO}(\text{MeO})_2\text{C}_6\text{H}_2$ , resp.). They attempted to prove the structures of their compounds, which gave  $\alpha$ -hemipinacol acid,  $4,6,1,2-(\text{MeO})_2\text{C}_6\text{H}_3(\text{CO}_2\text{H})$ , ( $II$ ), with  $\text{KMnO}_4$ , by synthesizing the corresponding ethers ( $R' = (\text{MeO})_2\text{C}_6\text{H}_3$ , and  $(\text{MeO})_2\text{C}_6\text{H}_2$ ) from  $\text{RO}(\text{RO})_2$ .

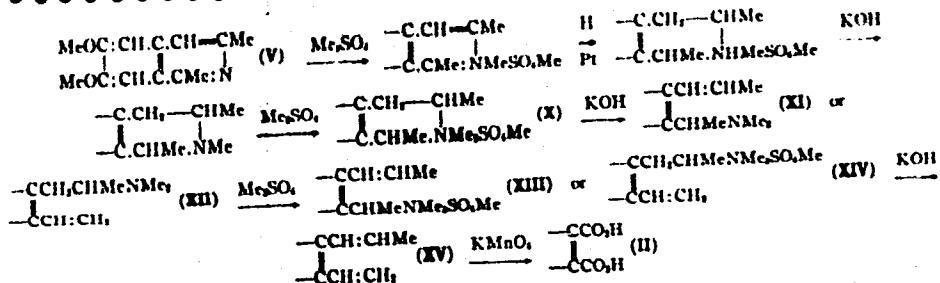


$\text{C}_6\text{H}_5\text{CH}_2\text{CHMe}$  by the method of B. and v. Fodor (C.A. 32, 3403<sup>b</sup>), which consists in subjecting the side chain

to the series of reactions  $-\text{CH}=\text{CHMe} + \text{N}_2\text{O}_4$  →  $-\text{CH}(\text{NO}_2)\text{CH}(\text{NO}_2)\text{Me} + \text{Ac}_2\text{O} \rightarrow -\text{CH}(\text{OAc})\text{CH}(\text{NO}_2)\text{Me}$  + electrolytic reduction, then  $\text{Na}_2\text{CO}_3 + \text{H}_2\text{O} \rightarrow -\text{CH}(\text{OH})\text{CH}(\text{NH}_3^+)\text{Me}$  (III) + dil.  $\text{H}_2\text{SO}_4 \rightarrow -\text{CH}(\text{OH})\text{CH}(\text{NH}_3^+)\text{Me} + \text{R}'\text{COCl} + \text{NaOH} \rightarrow \text{IV}$ , and closing the ring by treating IV with  $\text{POCl}_3$ . As the products thus obtained were not identical with those from brasolin and hematocylin, P., B., and S. concluded that the ring closure had taken place at the 2-, not the 6-C atom of IV. It therefore seemed desirable to check the structure or the direction of ring closure of all the isoquinolines which had been prep'd. by the above method, especially as Sugawara and Shigehara (C. I. 35, 5113) had pointed out that the direction of ring closure in the prepn. of the isoquinoline neuapavine required verification. It was first of all undertaken to det. the influence of the ether groupings ( $\text{RO}$  and  $\text{R}'\text{O}$ ) on the direction of the ring closure, and the 1,3-dimethylisoquinolines (I,  $\text{R}' = \text{Me}$ ), with  $\text{R}, \text{R}' = \text{Me}$ ,  $\text{Me}$  (V),  $\text{Et}$ ,  $\text{Et}$  (VI),  $\text{Me}$ ,  $\text{Et}$  (VII),  $\text{Me}$ ,  $\text{PhCH}_3$  (VIII), and  $\text{PhCH}_2$ ,  $\text{PhCH}_3$  (IX), all of which were readily obtained from the acetylamines of type III, were investigated. Since all are genetically related (see below) it was necessary to det. the structure of only 1 of them (V). This was accomplished by exhaustive methylation and  $\text{KMnO}_4$  oxidation of the end degradation product through the following series of reactions:

ASM-SEA METALLURGICAL LITERATURE CLASSIFICATION

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No attempt was made to det. the point at which the ring in **X** opens to give **XI** or **XII**, which is immaterial for detg. the structure of **V**. The N-free end product **XV**, obtained, with copious evolution of **NMe**, from **XIII** or **XIV** with KOH, was apparently not homogeneous; it was an almost colorless oil, of faint camphorlike odor, permeated with crystals; the oily part was very easily sol. in cold petr. ether while the solid part crystd. from much petr. ether in needles. These crystals (0.5 g. from 4.2 g. **XIII** or **XIV**), m. 111°, on titration with Br took up only about 1 mol. Br, indicating, as did their analysis also, that they were not **XV**. Because of lack of sufficient material, this cryst. product was not further studied, and the crude oily degradation product, contg. only a few of the crystals, was oxidized with KMnO<sub>4</sub> without further purification. The formation of **II**, m. 184-6° (ethylimide, m. 230-2°), showed that ring closure of compds. of type **III** led to compds. of type **I**, irrespective of the nature of R and R', in every case investigated. The genetic relationship between **V**-**IX** was proved as follows: **VIII**, obtained from isoeugenol Me ether (*v.* Fodor, *C.A.* 30, 2801),

when debenzylated to **I** (R = R' = Ar, "ethylated with Et<sub>2</sub>SO<sub>4</sub>), gave a product identical with **VII** prep'd. from isoeugenol Et ether through **III** (R, R' = Me, Et). **IX** had already been converted by *v.* F. through **I** (R = R' = Me, R' = H) into **V**, identical with that obtained from isoeugenol Me ether through **III** (*B.* C.A. 29, 58256). **IX**, obtained from 3,4-(PhCH<sub>2</sub>O)<sub>2</sub>C<sub>6</sub>H<sub>3</sub>CH:CHMe through **III** (R = R' = PhCH<sub>2</sub>), was debenzylated to **I** (R = R' = H, R' = Me) which with MeSO<sub>4</sub> yielded **V** and with Et<sub>2</sub>SO<sub>4</sub> a **VI** identical with that obtained from **III** (R = R' = Et) by ring closure. *1,3-Dimethyl-6,7-dimethoxyisquinoline-MeSO<sub>4</sub>*, (**XVII**) (35 g. from 26.5 g. **V** in 200 cc. warm benzene with 25 cc. MeSO<sub>4</sub>), needles from EtOH-AcOEt, m. 222-3° (decompn.); m. 275-8°, sol. in dil. NaOH and H<sub>2</sub>SO<sub>4</sub>, was obtained in 1-g. yield by hydrogenating 2.4 g. **IX** in 250 cc. aldehyde-free alc. with 0.1 g. of 22% Pd-charcoal (preduced in 20 cc. alc.) (2 mols. H was absorbed in a few min.), filtering, concg. to 80 cc., allowing to stand 12 hrs. in ice, and washing the resulting crystals with MeOH; treated without further purification in 10% NaOH with MeSO<sub>4</sub>; it gave **V**, isolated as the HCl salt, needles from MeOH-Et<sub>2</sub>O,

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<p>m. 267-9° (decompn.), and with <math>\text{Et}_2\text{SO}_4</math>, it yielded VI (HCl salt, m. 236-8° from alc.-ether). VII, from 1,3-dimethyl-6-methoxy-7-hydroxyisoquinoline and <math>\text{Et}_2\text{SO}_4</math>, needles from aq. alc., changing to minute prisms at 100° <i>in vacuo</i>, m. 128-30°. VII was also prep'd. from iso Eugenol Et ether, 10 g. of which, in 100 cc. ether, added to 30 g. <math>\text{NaNO}_2</math> under 40 cc. water, layered, treated dropwise in the course of 4 hrs. with 60 cc. of 20% <math>\text{H}_2\text{SO}_4</math>, and the resulting product thoroughly washed with water, alc., and ether, and dried at room temp., gave 14 g. of the <i>pseudo-nitroso</i>, m. 110° (decompn.), after rubbing with much alc. and washing repeatedly with ether; 24.6 g. of the crude product suspended in 75 cc. of Ac<sub>2</sub>O was treated with a few drops of concd. <math>\text{H}_2\text{SO}_4</math>, and after it had dissolved, with vigorous evolution of nitrous gases, the soln. was vigorously stirred with much water until the excess of Ac<sub>2</sub>O had been destroyed, and the yellow cryst. product was thoroughly washed with water, dried, and crystd. from MeOH after treatment with charcoal, giving 20 g. 1-(3-methoxy-4-ethoxyphenyl)-2-nitropropyl acetate, prisms from MeOH, m. 85-0°; 20 g. of this was reduced electrolytically (C.A. 37, 0050) (catholyte, 75 cc. glacial AcOH + 150 cc. alc. + 85 cc. alc. <math>\text{H}_2\text{SO}_4</math> (100:15 by vol.); anolyte, 20% <math>\text{H}_2\text{SO}_4</math>; 1g cathode; peroxidized Pb plate anode; cathodic c.d., 0.07 amp./sq. cm.; temp., 25-30°; current used, 2 times the calcd.), then treated with a concd. aq. soln. of 40 g. crystd. NaOAc, filtered from the <math>\text{Na}_2\text{SO}_4</math>, 30 g. in 300 cc. of 80% alc. hydrogenated with 0.5 g. Pt oxide took up 2 mols. H in 2 hrs., and evapd. <i>in vacuo</i> gave a yellowish oil yielding from acetone-ether 18.5 g. of the 1,2,3,4-tetrahydroderiv. of XVI, prisms from aq. MeOH, m. 170-9°; 18 g. of this in 40 cc. water with 35 cc. of 20% KOH gave an oil which was shaken out portionwise with benzene, the benzene ext. dried with <math>\text{Na}_2\text{SO}_4</math>, heated 0.5 hr. on the water bath with 15 cc. <math>\text{Me}_2\text{SO}_4</math>, cooled, and decanted from the oily ppt., which was repeatedly washed with ether and treated with a little acetone, whereupon it crystd., giving 6 g. (+5 g. more from the mother liquors after addn. of ether) of 1,2,3-trimethyl-6,7-dimethoxy-1,2,3,4-tetrahydroisoquinoline-Me<sub>2</sub>SO<sub>4</sub>, X, m. 220° (from aq. MeOH-Me<sub>2</sub>CO). When 6 g. X was heated on the water bath with 50% KOH and the oil which sepd. on cooling was taken up in ether, there was obtained 3.6 g. of the open-chain base (XI or XII) as a thick colorless oil which eagerly absorbed Br in <math>\text{CHCl}_3</math>; <i>peracat</i>, <math>\text{CaHgNaO}_2</math>, yellow needles from water, m. 145°; HCl salt, needles from alc.-ether, m. 203-4° (decompn.). The base (3.4 g.) in 13 cc. anhyd. benzene, heated 0.5 hr. on the water bath with 6 cc. <math>\text{Me}_2\text{SO}_4</math> and, after cooling, treated with 160 cc. abs. ether, yielded 4.6 g. of the compd. XIII or XIV, hygroscopic needles from MeOH-Et<sub>2</sub>O, m. 110°, m. 119-20°, after drying <i>in vacuo</i> over <math>\text{P}_2\text{O}_5</math>. 1,2-Dimethyl-6,7-dihydroxyisoquinoline, pale greenish yellow, evapd. <i>in vacuo</i>, treated with excess of concd. <math>\text{Na}_2\text{CO}_3</math> soln., and the solid product washed with water, dried, and crystd. from MeOH-AcOEt, giving 14 g. 1-(3-methoxy-4-ethoxyphenyl)-2-acetamido-1-propanol (III), needles, m. 109-11°; 2 g. of this in 25 cc. toluene stable to <math>\text{POCl}_3</math> (C.A. 32, 3403), gently boiled 1 min. with 2 cc. <math>\text{POCl}_3</math>, yielded on cooling 1.3 g. of the HCl salt, needles from alc.-AcOEt, m. 206°, of VII.</p> <p style="text-align: right;">C. A. R.</p>																																																																																																															
ASA-LLA METALLURGICAL LITERATURE CLASSIFICATION																																																																																																															
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: left;">ECONOMIC INFORMATION</th> <th colspan="2" style="text-align: right;">TECHNICAL INFORMATION</th> </tr> <tr> <th colspan="2" style="text-align: left;">1401060</th> <th colspan="2" style="text-align: right;">8211111111111111</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">5</td> <td style="text-align: center;">6</td> <td style="text-align: center;">7</td> <td style="text-align: center;">8</td> </tr> <tr> <td style="text-align: center;">9</td> <td style="text-align: center;">10</td> <td style="text-align: center;">11</td> <td style="text-align: center;">12</td> </tr> <tr> <td style="text-align: center;">13</td> <td style="text-align: center;">14</td> <td style="text-align: center;">15</td> 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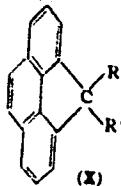
PROCESS AND PROPERTIES INDEX	
C A	10
	Synthetic and degradative studies in the isoquinoline series. III. V. Bruckner, G. Pistor, J. Kovacs, and J. Kies (Univ. Szeged, Hungary). <i>J. Am. Chem. Soc.</i> , <b>70</b> , 2097-8 (1948); cf. <i>C.A.</i> <b>40</b> , 6181 <sup>a</sup> .—Pfeiffer, et al. ( <i>C.A.</i> <b>36</b> , 2383 <sup>b</sup> ), obtained a compd. from brasiliin for which they suggested the structure 1-(2-hydroxy-4-methoxyphenyl)-3-methyl-4,7-dimethoxyisoquinoline (I); attempted synthesis of I led to a compd. to which they assigned the structure of the 7,8-di-MeO isomer (II). 2,4-HO(MeO) <sub>2</sub> C <sub>6</sub> H <sub>3</sub> CO <sub>2</sub> Me (18 g.) and 13 ml. PhCH <sub>2</sub> Cl in 100 ml. EtOH contg. 2.3 g. Na, refluxed 12 hrs., and the product saponified with 8 g. KOH in 20 ml. H <sub>2</sub> O, give 0.5 g. 2-(benzoyloxy)-6-methoxybenzoic acid (III), m. 103°. III (0.5 g.) in 20 ml. PhMe, heated at 35-40° with 10 ml. SOCl <sub>2</sub> until HCl is evolved, the SOCl <sub>2</sub> removed <i>in vacuo</i> , the residue in 50 ml. hot abs. PhMe added dropwise to 21.3 g. 3,4-(MeO) <sub>2</sub> C <sub>6</sub> H <sub>3</sub> CH(OH)CHMeNH <sub>2</sub> in 500 ml. boiling PhMe and the mixt. refluxed 15 min., gives 91% 1-(3,4-dimethoxyphenyl)-2-[2-(benzoyloxy)-6-methoxybenzimidol]-1-propanol (IV), m. 130-40°. IV (14.5 g.) in 300 ml. hot PhMe, treated with 15 ml. POCl <sub>3</sub> and refluxed 1 hr., gives 75% 1-[2-(benzoyloxy)-4-methoxyphenyl]-3-methyl-6,7-dimethoxyisoquinoline (V), m. 214° (HCl salt, yellowish green, m. 221-2°). V (15 g.) in 300 ml. abs. EtO <sub>1</sub> reduced over Pd-C, gives 80% I, m. 143-4° [HCl salt, yellow, m. 271°; picrate, yellow, m. 274-6° (decompn.), as reported by P., et al.; Me ether, m. 144°]. Oxidation of I with alk. KMnO <sub>4</sub> gives 4,5,1,2-(MeO) <sub>2</sub> C <sub>6</sub> H <sub>3</sub> (CO <sub>2</sub> H). Thus, the synthetic product of P., et al., is I and not II and the structure of the product from brasiliin is still undetd.
	C. I. West
ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION	
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SERIALIZED	INDEXED
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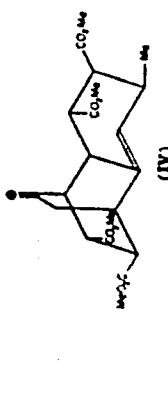
Addition of  $\alpha,\beta$ -unsat'd anhydride to anethole. II. V. Bruckner and J. Kovács (Univ. Szeged, Hung.), *J. Org. Chem.* 16, 652 (1951); cf. *C.A.* 44, 1024c. Although I resisted catalytic hydrogenation (Pt or Pd) at atm. pressure, the existence of the double bond not in the enol ether group of II and III (prep'd. from I) was demonstrated by bromination and oxidation with  $H_2O_2$ . This completed the proof of structure for I, II (3.64 g.) in 200 ml. 2% KOH, added to 6.8 g. Br in 60 ml. 10% KOH, the soln. filtered after 2 days, treated with Na<sub>2</sub>SO<sub>4</sub>, acidified (pH 1-2) with 2 N HCl, and evap'd. *in vacuo* to dryness, the combined solns. from boiling the residue twice with dry MeOH evap'd. (reduced pressure), and the oily residue crystd. several times (once with charcoal) from H<sub>2</sub>O, gave 1.6 g. partly esterified mono-Br derv. of II, colorless needles, m. 196°, 0.4 g. of which in dry MeOH with CH<sub>3</sub>N<sub>3</sub> gave 1.6 g. of the  $\delta$ -Br derv. (IV) of III, colorless needles, m. 237-8° (after recrystn. from MeOH and then Et<sub>2</sub>OAc). Adding 35 ml. of 5% soln. of Br in dry MeOH to 4 g. II in 15 ml. dry MeOH, evap'd. after the Br color disappeared (several min.), triturating the yellowish oil with 12 ml. H<sub>2</sub>O, boiling the resulting oily crystals a few min. with 100 ml. H<sub>2</sub>O, and coneg. the filtered soln. to 30 ml. also gave 1.1 g.

gives 1-(2-pyanoethyl)-2,2,4-trimethyl-1,2-dihydrofuran-thene, viscous oil, b.p. 185-94°, which is saponifd. to the corresponding propionic acid (VIII), m. 144-5°. Treatment of 32 g. acid chloride of VIII in CS<sub>2</sub> with 60 g. NaCl gives 1,1'-(2,2,4-trimethyl-6'-keto-1,2,1',2',3',4'-hexahydro-8,8'-bisphthalyl)spiran, b.p. 188-91°, crystals from CHCl<sub>3</sub>-ligroin, m. 136-8°. Dropwise addition of 345 g. NaCl to 200 g.  $\beta,\beta'$ -(9-fluorenylidene)dipropionyl chloride at 0°, stirring the mixt. 4 hrs., and refluxing it 16 hrs., give 1,1'-(4,4'-diketo-1,2,3,4,1',2',3',4'-octahydro-8,8'-bisphthalyl)spiran (IX), b.p. 180-5° (mol. still), crystals from CHCl<sub>3</sub>-ligroin, m. 207-8° (diisome, m. 224-5°). The acid portion from this expt. (20.8 g.) was refluxed with 2% EtOH-HCl, giving E<sub>t</sub> 4-keto-1,2,3,4-tetrahydro-1-fluoranthene-3-propanoate, b.p. 189-93°, which, saponifd., gives the free acid, m. 183-5° (oxime, m. 210-13°). Reduction of 13.7 g. IX in 200 cc. AcOH at 20° in the presence of PtO<sub>2</sub> 16 hrs. gives 1,1'-(4,4'-dihydroxy-1,2,3,4,1',2',3',4'-octahydro-8,8'-bisphthalyl)spiran, m. 200-1° (di-Ac derv., prep'd. with Ac<sub>2</sub>O-C<sub>6</sub>H<sub>5</sub> 12 hrs. at 20°, m. 150-3°, subliming at 160° in a high vacuum). 4,5-Methylene-phenanthrene (X, R = R' = H) (47.5 g.) with 30 g. CH<sub>3</sub>:CH<sub>2</sub>CN gives the dinitrile (X, R = R' = CH<sub>3</sub>:CH<sub>2</sub>CN) which, saponifd., gives the dicarboxylic acid (X, R = R' = CH<sub>3</sub>:CH<sub>2</sub>CO<sub>2</sub>H); the latter, with SOCl<sub>2</sub> (X, R = R' = CH<sub>3</sub>:CH<sub>2</sub>CO<sub>2</sub>H); the latter, with SOCl<sub>2</sub> (X, R = R' = CH<sub>3</sub>:CH<sub>2</sub>CO<sub>2</sub>H).



Dropwise addn. of 75 g.  $\text{SnCl}_4$  to 47 g. XI in 200 cc.  $\text{CS}_2$  and stirring the mixt. 72 hrs. at 20° give *1,1'-[4,4'-di-keto-7,7'-vinylene-1,2,3,4,1',2',3',4'-octahydro-s-s'-binaphthyl]spiro*, b.p. 200°, crystals from  $\text{AcOEt}$ -ligroin, m. 182-5°. Refluxing a mixt. (prepd. in the order given) of 12 g. amalgamated Zn filings, 7.5 cc.  $\text{H}_2\text{O}$ , 17.5 cc. concd.  $\text{HCl}$ , 10 cc.  $\text{PhMe}$ , 2 drops  $\text{AcOEt}$ , and 1 g. IX (or II) 24 hrs. with 3 addns. of 5 cc. concd.  $\text{HCl}$  after each 6 hrs. gives *1,1'-[1,2,3,4,1',2',3',4'-octahydro-s,s'-binaphthyl]spiro* (XII), colorless oil with bluish fluorescence, b.p. 130°, b.p. 140°. Attempts to dehydrogenate XII by heating 1 g. with 1 g. Pd-charcoal in 50 cc. abs.  $\text{Me}_2\text{CO}$  8 hrs. at 240-50° or 3.4 g. with 0.9 g. powd. S 3 hrs. at 210-21° in a slight vacuum failed. Attempts to dehydrogenate IX with chloranil or by heating 2.75 g. with 1.0 g. Se 12 hrs. at 230-90° also failed (cf. v. Braun and Rath, *C.A.* 22, 2748).  
F. E. Brauns

Addition of maleic anhydride to acetohole, III, U.S.  
Bruckenthal, Kovacs, and P. Huhn (Univ. Budapest,  
 $\gamma$ -Orf, Chem. 14(1971), 1411-4 (infin); cf. U.A., 44, 20222.  
S29b. — Because the structure (I) proposed by B. for the  
add. product (II) of maleic anhydride (III) to acetohole (ref.  
C.R., 43, 2692) was disputed by Lora Tamayo (C.J., 43,  
297 (1970)), further proof in support of I is submitted. Adding  
6.3 g. red P and 10 g. AcO (previously refluxed 0.5 hr.), adding  
and 170 g. AcO (previously refluxed 0.5 hr.), refluxing the  
mix. 4 hrs., evap. at 23 mm., removing the III from the  
residue by repeated distn. with  $\text{H}_2\text{O}$ , dissolving the residue  
in 100 cc.  $\text{H}_2\text{O}$ , evap. the filtered soln., treating the residue  
in 40 cc. MeOH with  $\text{CH}_3\text{N}_3$  and recrysp. the residue of  
the several solids from 50 cc. ether give 0.5 g. of the tetra-Me  
ketone, trans-tetracarboxylate (IV), m.p. 151-5°. Distill.  
of the residue of the ether mother liquor gives 1.5 g. mobile  
oil, b.p. 70-80°, not further investigated, and 7.5 g. viscous



oil, b.p. 240-5°, from which, after refluxing 2 hrs. with 45 cc.  
15% NaOH, 0.5 g. E. J.-wadyl- $\beta$ -methoxy-1,2-dihydrophthalic  
acid-maleic- $\alpha$ - $\beta$ -diisobutyric acid (V), long needles, m.  
211°, is obtained. Before the distn. of V some ( $\text{CHCl}_3$ )  
Me<sub>2</sub> prisms, m. 101-2°, sublimes. Warming 261 mg. V  
with 2 cc. AcO 3 min. at 90° evap., the mixt. in vacuo,  
and recrysp., the residue from  $\text{Et}_2\text{O}$  and pear. ether give  
the anhydride (VI), m. 122°. Heating an infinite mixt. of  
27 mg. VI and 50 mg. 10% Ph-chareud in a  $\text{CO}_2$  stream at  
290° gives 3-methyl-1,7-methoxy-1,2-naphthaleneethoxylic  
anhydride, m. 214-17°. When 10 mg. VI is heated with  
27 mg. III 3 hrs. at 80°, VI is recovered unchanged. Heatin.  
ing 16 mg. VI and 50% m. III 4 hrs. at 150° gives an  
add. Crilic, crystals from  $\text{Me}_2\text{CO}$ , m. 200°, which is  
an isomer of II. The formation of IV can be explained only  
on the basis of I.

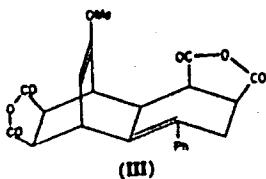
P. Huhn

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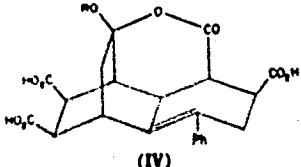
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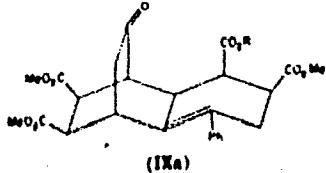
On the structure of the bis-adducts formed by addition of maleic anhydride to 1,2-darylalkylenes. V. Bruckner, J. Kovacs, and P. Huhn (Univ. Budapest). *J. Org. Chem.* 16, 1649-57 (1951); cf. *C.A.* 46, 5544f.—Because of contradictory reports on the addn. of maleic anhydride (I) to arylalkylenes (cf. Wagner-Jauregg, *C.A.* 20, 982; Bergmann, *et al.*, *C.A.* 41, 6231f.), this reaction is reinvestigated. Heating 21 g. Ph(*p*-MeOC<sub>6</sub>H<sub>4</sub>)C=CH<sub>2</sub> (II), 19.6 g. I, and 0.4 g. PhNMe<sub>2</sub> 1-2 hrs. on a water bath, adding 50 cc. Ac<sub>2</sub>O to the cooled melt, keeping the mixt. 24 hrs. at 20°, and washing the ppt. twice with 15 cc. Ac<sub>2</sub>O, twice with 15 cc. K<sub>2</sub>CO<sub>3</sub>, and twice with 15 cc. ether give 27.4 g. II bis-(maleic anhydride) adduct (III), thin plates, m. 232-4°



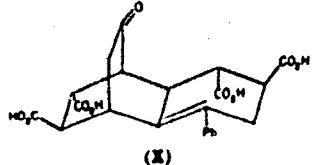
(decomp.). Refluxing the residue of the combined mother liquors with H<sub>2</sub>O gives a tricarboxylic acid (IV, R = II).



Shaking 5 g. finely powd. III with 25 cc. ice-cooled 2 N NaOH, dilg. the mixt. with 225 cc. ice H<sub>2</sub>O, acidifying the charcoal-treated soln. with 200 cc. 0.2 N HCl, and keeping it 12 hrs. in the ice box give 3.8 g. lactone tricarboxylic acid (V), C<sub>11</sub>H<sub>10</sub>O<sub>6</sub>, 0.5H<sub>2</sub>O, m. 210-12°, which, treated with Ac<sub>2</sub>O, gives III, m. 232-3° [tri-Me ester (VI), prep'd. with CH<sub>3</sub>N<sub>3</sub>, prisms, m. 204°]. Refluxing 37 g. III with 400 cc. H<sub>2</sub>O 5-6 hrs. gives 79% IV, C<sub>11</sub>H<sub>10</sub>O<sub>5</sub>·2H<sub>2</sub>O, long cottonlike needles, m. 181-2° (decomp.), which does not contain MeO. Refluxing 10 g. III with 30 cc. 80% HCO<sub>2</sub>H 0.5 hr. gives 72% IV. Boiling 2 g. III in 28 cc. 2 N NaOH 15 min. and acidifying the mixt. with 30 cc. 2 N HCl also give IV. Boiling 10 g. IV with 30 cc. Ac<sub>2</sub>O 1-2 min. gives the anhydride (VII), m. 298-300°, which is also obtained by boiling 1 g. III with 3 cc. 18% HCl until 15 min. and keeping the



(IXa)

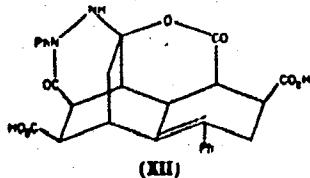


(X)

mixt. 24 hrs. in an ice box. Refluxing 0.6 g. VI in 8 cc. 30% HCO<sub>2</sub>H 2 hrs. and adding 8 cc. MeOH and about 15 cc. H<sub>2</sub>O give 0.2 g. tri-Me metrotetracarboxylate (VIII), needles, m. 148-9°. VIII is readily sol. in 2 N NaOH and

liberates CO<sub>2</sub> from Na<sub>2</sub>CO<sub>3</sub>. Refluxing 3 g. III in 43 cc. abs. MeOH with 6 cc. concd. H<sub>2</sub>SO<sub>4</sub> in 6 cc. MeOH 2 hrs. and keeping the mixt. 8 hrs. in the ice box give 2.1 g. *tetra*-Me metrotetracarboxylate (IX) (IXa, R = Me), m. 172-3°, which is also obtained when IV or VIII are treated with ClH-Ni. Refluxing 10 g. III, IV, V, or VII in 120 cc. concd. HCl-Ni, 10 hrs., concg. the decolorized soln. to incipient crystall., and keeping it 8 days in an ice box give 2.1 g. *exo*-trans-*disub*-carboxylic acid (X), C<sub>11</sub>H<sub>14</sub>O<sub>8</sub>, m. 273°. Refluxing 0.5 g. X in 1 cc. Ac<sub>2</sub>O 2 min., evap. the mixt. *in vacuo*, and treating the residue in BiOAc with CH<sub>3</sub>Ni give the *tert*-Me ester, prisms, m. 196°, also obtained from X and MeOH in the usual way. Boiling 0.7 g. X in 3.6 cc. 2 N NaOH with 0.6 g. HONH<sub>2</sub>-HCl in 2 cc. H<sub>2</sub>O 20 min. and acidifying the cooled soln. with 2 N HCl give the amine (XI), prisms, m. 234-7°, which, methylated with CH<sub>3</sub>Ni, gives the *tert*-Me ester of XI, needles, m. 192°. Boiling 3 g. IV in 30 cc. H<sub>2</sub>O with 3 g. PhNH<sub>2</sub>-HCl in 10 cc. H<sub>2</sub>O 0.5 hr. gives 2.3 g. of a pyridazine (XII) cryst. with 0.5 H<sub>2</sub>O, softening at 204°.

CH



m. 217-20°; *di-Me ester*, 60% yield, m. 220°. Boiling 5 g. IV and 3 g. HONH<sub>2</sub>.HCl in 20 cc. H<sub>2</sub>O 20 min. gives 3.4 g. of a 1,3-disubst. deriv., cryng. with 2 H<sub>2</sub>O, methylated with CH<sub>3</sub>N<sub>3</sub> to a compd., C<sub>21</sub>H<sub>20</sub>O<sub>6</sub>, very slender needles, m. 278°, which seems to be a *tri-Me ester* of the *bis-condensate* of IV and H<sub>2</sub>NOH. Adding 110 cc. 33% H<sub>2</sub>O<sub>2</sub> within 0.5 hr. to 10 g. IV in 180 cc. AcOH at 80°, keeping the mixt. 1 hr. at 80°, concg. it to incipient crystn., and keeping it in an ice bath give 4.5 g. of a *tribasic OH lactone*, C<sub>21</sub>H<sub>20</sub>O<sub>6</sub>, thin needles, m. 325-30°, which, with CH<sub>3</sub>N<sub>3</sub>, gives a *tri-Me ester*, thin needles, m. 291-8°. Heating 5 g. III at 300°/1 mm., warming the distillate with 10 cc. N NaOH at 100°, and catg. with ether give 0.2 g. II, m. 78°. F. B. Brauns

*C.A.*

Addition of maleic acid anhydride to benzaldehyde azine  
J. Kovács, V. Brückner, and I. Kandl (Univ. Budapest,  
Hung.) *Acta Chim. Hung.*, 1, 230-43 (1951) (in German).  
Various attempts were made to increase the yield of the  
bis adduct, but with the solvents tested the yield did not  
exceed the 10% described by Wagner-Jauregg (C.A. 25,  
2418). By modifying the procedure, however, yields of  
about 30% were obtained by treating the agents in stoichio-  
metric ratios not exceeding 0.1-0.2 mol. 10-15 min. at 100°  
and washing the cryst. mass. The product, m. 245°  
(unpub.), consists of 2 isomeric components separable by  
fractional crystn. The major component, designated as the  
*1-bis adduct* (I), m. 281°, is accompanied by about 1.5% of  
an isomer designated as the *B-bis adduct* (II), m. 233°. The  
properties of I agree well with the structure proposed by  
Wagner-Jauregg. By alk. sapon., the free tetracarboxylic  
acid was liberated from I. The oxidative decompr. of I  
confirmed the Wagner-Jauregg structure. The examin. of  
II proved that I and II are stereoisomers. Whereas the  
oxidative decompr. of I by KMnO<sub>4</sub> in aq. alk. soln. with  
cooling by ice gave (CO<sub>2</sub>H)<sub>4</sub>, BrO<sub>4</sub><sup>-</sup>, and 3-phenylpyrazole,  
the formation of 3-phenylpyrazole was not observed with II.  
The identity and stereoisomeric relation of I and II was also  
verified by the absorption spectra of their tetra-Me ester,  
m. 220-1°, and 180°, which show identical shapes with  
different absorption max. István Finály

Bruckner

Chemical Abst.  
Vol. 48 No. 6  
Mar. 25, 1954  
Organic Chemistry

Synthesis of  $\alpha$ -L-polyglutamic acid. V. Bruckner, J. Kovář, and K. Kovářová (Univ. Budapest). *Angew. Chem.* 39, 387 (1952).

Efforts to make the free acid from alkyl ester (Hanby, *et al.*, C.I. 45, 6578g) have failed either because of racemization or of incomplete saponification. However, if the Me ester, prep'd. from the Leuchs anhydride, is converted to the polyhydrazide with anhyd.  $N_2H_4$  and dissolved in dil. HCl; heating of this sol. yields pure  $\alpha$ -L-polyglutamic acid, white amorphous powder giving a strong biuret reaction, little sol. in water, mol. wt. 2300 (14 glutamic acid units); stable (several hrs. boiling with 20% HCl does not destroy it, although boiling 34% HBr rapidly hydrolyzes it), optically pure. The strong L-rotation of the alk. soln. disappears at room temp. because of racemization. The properties are not in accord with the structure suggested by Hanby (C.A. 46, 6831<sup>b</sup>) for natural D-glutamic acid.

B. J. C. van der Hoeven

BRUCKNER, V.

Chemical Abst.  
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Biological Chemistry

(4) CW

Structure of poly-D-glutamic acid isolated from capsulated strains of *Bacillus anthracis*. V. Bruckner, J. Kovács, and G. Dénes (Univ. Budapest). *Nature* 172, 508 (1953).—The polypeptide was prepd. by using nonsporing capsulated *Bacillus anthracis* strains of low virulence. The crude polypeptide was isolated from agar cultures of this strain; dried *in vacuo* at room temp., esterified with methyl alc. by addn. of acetyl chloride, and repeatedly fractionated from methanol by pptn. with increasing quantities of ether. The av. mol. wt. of the cold water-insol. fraction was 45,000-53,000. It is suggested that in this fraction of poly-D-glutamic acid of *B. anthracis*, the  $\gamma$ -glutamyl link is predominant. J. C. Arthur, Jr.

*BRUCKNER, V.*

Structure of native poly-L-glutamic acid. II. Synthesis of  $\alpha$ -poly-L-glutamic acid hydrazide and the Curtius degradation thereof. *V. Kovács, V. Bruckner, and K. Kovács*. Univ. Budapesten. J. Chem. Soc., 1952, 45-7; *cf.* 1952, 47, 5622. — Powell, L. glutamic acid-HCl (15 g.) shaken 30 min. with 50 ml. MeOH contg. 0.8% HCl. The soln. evapred. in vacuo at 40°, and further MeOH added. Yielded 11.2 g.  $\alpha$ -Me ester-HCl (I). m. 164°. I (100 g.) in 500 ml. anhyd. dioxane was watd. with COCl<sub>2</sub> 5 hrs. at 40°, filtered, and the filtrate evapred. in vacuo at 50°. The residue treated in CHCl<sub>3</sub> with light pett. ether gave (5 g. 90%). To 33 g. II in 200 ml. EtOAc was treated in 5 drops H<sub>2</sub>O<sub>2</sub>. CO<sub>2</sub> was evolved 4 hrs., and after 2 days, 25 drops H<sub>2</sub>O<sub>2</sub>. CO<sub>2</sub> was evolved (III) was obtained. Me  $\alpha$ -poly-L-glutamate (III), was obtained. The mixt. boiled, cooled, centrifuged, evapred. in vacuo, and the residue ground with H<sub>2</sub>O and freeze-dried to give a cream. Yield of  $\alpha$ -poly-L-glutamic acid hydrazide (IV). Since the (-120°) of IV (I) decreased during 10 days to -120°, a similar recrystallization was believed to have occurred. IV (180 mg.) in 1.4 N HCl evapred. in vacuo, the residue dissolved in 2 ml. H<sub>2</sub>O, 1.5 ml. of a 4.1% NaNO<sub>2</sub> soln. added, the mixt. heated, 20 ml. HCl added, the mixt. refluxed, evapred. to dryness, and the residue treated in H<sub>2</sub>O with satd. picric acetic soln. yielded 1.24 g. 2,4-diaminobutyric acid dipicrate, m. 187-9°. To 250 mg. IV in 12 ml. 0.3 N HCl, was added 2.7% NaNO<sub>2</sub>, and the mixt. worked up as before except that hydrolysis was only for 4 hrs.; 50% of flavinic acid yielded the corresponding dihydronaphthalene, m. 239°. *V. Bruckner, V. Kovács, and H. Nagy.* *Ibid.*, 148-50. — *Bacillus subtilis* strain #16 of *dictyostelium* Med. Chem. of the Univ. of Buna-pest, was found to be identical with strain #712 of the U.S. Dept. of Agr. used by Bruckner (*C.A.*, 37, 9019). The medium was worked up according to the method cited, and the polypeptide pool, as its Cu salt (I). I was dialyzed against a citrate buffer (0.5M pH 5.0) and, after removal of Cu ions, against distilled H<sub>2</sub>O and freeze-dried until the vol. was 30 ml. A mixt. of 100 ml. MeOH and 20 ml. Et-O ppdt. the acid Na salt of D-polyglutamine acid (II). Further washing, centrifuging, and freeze-drying gave 6 g. pure II.

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1/2 J. Kovacs, V. Bruckbauer & K. Kovacs

II (4 g.) in 100 ml. MeOH and 2 ml. AcCl was kept, protected from moisture, 12 days at room temp.; addn. of 35 ml. Et<sub>2</sub>O ppts. a solid (III), which was centrifuged and washed separately with MeOH and H<sub>2</sub>O. The MeOH washings of III and the mother liquor, mixed with 2 vols. abs. Et<sub>2</sub>O, yielded a gum which was dissolved in 40 ml. MeOH, repprtd. with abs. Et<sub>2</sub>O, centrifuged free of solvent, washed with H<sub>2</sub>O, and the washings (IV) added to the H<sub>2</sub>O washings of III. The H<sub>2</sub>O-insol. poly-Me ester (V) was dried in *vacuo* over P<sub>2</sub>O<sub>5</sub>. The H<sub>2</sub>O washings of IV and III were evapd., and the residue washed and dried in *vacuo*. Dlqn. with 1:1 MeOH-H<sub>2</sub>O and freeze-drying gave colorless and loose-cottony substance (VI), MeO 19.3, total N 0.7, amino-N 0.1%, indicating a mol. wt. of 8240, corresponding to 7430 for the free polyacid. V (0.5 g.) in 30 ml. liquid NH<sub>3</sub> (distd. from Na) was kept in a sealed tube 48 hrs. at room temp., the NH<sub>3</sub> evapd., the residuum dissolved in H<sub>2</sub>O, filtered, and the filtrate freeze-dried to give poly-D-glutamamide (VII). The other polyester VI, similarly treated, gave 185 mg. VIII. VII (50 mg.) dissolved at room temp. in 2.1 ml. of 1.4% NaOCl soln., the mixt. made acid with 10 ml. concd. HCl, refluxed 30 min., evapd. to dryness, the solid heated with 12 drops fresh *p*-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NHNH<sub>2</sub> soln., and the mixt. cooled gave 32 mg. yellow solid, m. 170-2°, recrystd., m. 178° alone and mixed with the same deriv. of OHCCCH<sub>2</sub>CH<sub>2</sub>CO<sub>2</sub>H (IX). VIII (60 mg.) similarly treated gave 38 mg. IX. Various control expts. with IX were also performed.

J. S. Martin, Jr.

*Brouet's R.V.**Chem  
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*J. Structure of native poly-D-glutamic acid. IV. Synthesis of poly-L-glutamine and the Holmann degradation thereof.*

*V. Bruckner, J. Kovács, and K. Kovács (Univ. Budapest),*

*J. Chem. Soc. 1953, 1572-14; cf. C.A. 47, 5427: 48,*

4442b.—The previous conclusion is corroborated and new data are presented which indicate that in native poly-D-glutamic acid,  $\alpha$ -glutamyl bonds cannot predominate since analogous treatment of the polyamides prep'd from native polyacid gave no detachable  $H_3NCOCH_2CH_2CH(NH_2)CO_2H$  (I). Thus, to an ice-cooled stirred soln. of 10 g. DL-glutamine in 180 ml. 3.33% NaHCO<sub>3</sub> soln., were added 25 g. CICO<sub>2</sub>CH<sub>2</sub>Ph (IA) and 20 g. NaHCO<sub>3</sub> portionwise during 15 min., stirring was continued 1 hr. with cooling and 2 hrs. more at room temp., the excess IA extd. with EtOAc, and the soln. made acid to Congo red and chilled to give 12 g.  $N^2$ -carbobenzoyloxy-DL-glutamine (II), m. 144-5° (from EtOAc-petrol mixt.) (Bergmann and Zervos, C.A. 26, 5972). II (5 g.), 20 ml. Ac<sub>2</sub>O, and 2.5 ml. freshly distd. SOCl<sub>2</sub> were refluxed with the exclusion of H<sub>2</sub>O, the excess SOCl<sub>2</sub> and Ac<sub>2</sub>O evapd., and the residual oil was warmed 2 hrs. at 10° and for 2 hrs. at 130°; much foaming developed.

and 3.38 g. of a resin formed, but no synthesis and polymerization of the expected 4-(2-carbamoyethyl)-2,5-oxazolidinedione occurred. Me  $\alpha$ -poly-L-glutamate (C.A. 48, 4442b; Hanby, et al., C.A. 45, 6578g; Coleman, C.A. 46, 977e) (12 g.) kept with 200 ml. liquid NH<sub>3</sub> (distd. from Na) in a sealed tube 1 week at room temp. with occasional shaking gradually crumbled; the NH<sub>3</sub> removed, the product washed 5 times with a total of 200 ml. H<sub>2</sub>O, dried *in vacuo* over P<sub>2</sub>O<sub>5</sub>, finely powdered, and the previous NH<sub>3</sub> treatment repeated gave 9 g. poly-L-glutamine (III), also secured when the reaction temp. was 60°. To a freshly prep'd. NaOBr soln. (0.6 ml. Br in 20 ml. 3*N* NaOH) was added 1.3 g. finely powd. III, the mixt. shaken, heated 15 min. at 90°, acidified with concd. HCl, evapd. *in vacuo*, the residue

dissolved in 30 ml. concd. HCl, filtered, the filtrate refluxed 20 hrs., evapd. *in vacuo*, and the residue redissolved in H<sub>2</sub>O, again evapd., dissolved in aq. picric acid and let stand overnight, giving 0.4 g. solid identified as I dipicrate, m. 189° III (325 mg.) treated with one-fourth the above quantities of NaOBr soln., worked up as the above, the hydrolyzate evapd. *in vacuo*, and the residue treated in 4 ml. H<sub>2</sub>O with 1.5 g. flavianic acid gave 370 mg. of yellow needles identified as I diflavanate (IV), m. 232°. III (100 mg.) treated with 3.2% NaOCl\* (from 3.7 ml. of 2.5*N* NaOH) hydrolysed, worked up, and treated with said. flavianic acid, as above, gave 95 mg. IV, m. 239° (from H<sub>2</sub>O). III (50 mg.) was treated with alk. NaOCl soln. as above, the subsequent acid hydrolysis effected in the same manner as in the Holmann degradation of the polyamide of native poly-D-glutamic acid (*loc. cit.*), the resulting 2.1 ml. alk soln. treated with 10 ml. concd. HCl, the mixt. refluxed 30 min., cooled, filtered, the filtrate evapd. *in vacuo*, the residue dissolved in H<sub>2</sub>O, the soln. again evapd., and the residue treated with 1 ml. aq. flavianic acid to give 10 mg. IV, m. 237°. Finely powd. III (50 mg.) shaken 1 hr. with 2.1 ml. of 1.4% alk NaOCl and warmed 10 min. to 50° gave no NH<sub>3</sub>. The mixt. was refluxed 30 min. with 10 ml. concd. HCl, evapd., the residue taken up in H<sub>2</sub>O and the soln. again evapd.; the residue dissolved completely in 12 drops. fresh satd.  $\rho$ -O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NHNH<sub>2</sub> soln. in *N* HCl; neither on subsequent warming nor on cooling and seeding with  $\rho$ -O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>NHNH<sub>2</sub>CHCl<sub>2</sub>CO<sub>2</sub>H was any sept. of solid noted whereas degradation of the amide of 50 mg. native poly-D-glutamic acid under the identical conditions gave 32 mg. of the deriv.

I. S. Martin, Jr.

BRUCKNER, V.

H U N G .

The structure of natural poly-D-glutamic acid. V. Bruckner and József Kovács (B. L. Univ., Inst. Org. Chem., Budapest). Magyar Tudományos Akad. Kém. Tudományok Osztályának Közleményei 3, 105-24 (1953); cf. C.A. 48, 7552a.—The type of glutamyl bonds present in natural poly-D-glutamic acid (I) was detd. by converting natural I into its polymethyl ester, from which the polyhydrazide (Ia) and polyamide (Ib) were prep'd. Curtius degradation of Ia and Holmann degradation of Ib, followed by acid hydrolysis gave only  $\beta$ -formylproprionic acid (II) and no  $\alpha$ , $\gamma$ -diaminobutyric acid (III), proving the  $\gamma$ -glutamyl bond to be predominant in natural I. Similar degradation of synthetic I gave III and no II. Nicholas Feldman

*BRUCKNER*

1. Synthesis of optically pure L- and D- $\alpha$ -polyglutamic acid.  
V. Brückner, J. Kovács, and K. Kovács (Eötvös Univ.,  
Budapest). *Acta Chim. Acad. Sci. Hung.* 3, 361-9 (1953)  
(in German). -  $\gamma$ -Methyl D-glutamate hydrochloride, D-  
4-( $\beta$ -carbomethoxyethyl)oxazolidine-2,5-dione, methyl  $\alpha$ -  
poly-D-glutamate, and  $\alpha$ -poly-D-glutamic acid hydrazide  
were prep'd. from D-glutamic acid (Price, et al., C.A. 44,  
5461) by exactly the same procedures used for prep'g. the  
corresponding L-compds. (C.A. 48, 4442b). A soln. of 1.5 g.  
 $\alpha$ -poly-L-glutamic acid hydrazide in 25 ml. 7N HCl was  
held 30 min. at 80°, refrigerated for 12 hrs., the ppt. of  $\alpha$ -  
poly-L-glutamic acid (I) (0.8 g.) washed with H<sub>2</sub>O and dried.  
I was further purified with boiling 6N HCl for 1 hr.; very  
slightly sol. in H<sub>2</sub>O; sol. in dil. NaOH; alk. soln. gives strong  
biuret reaction;  $[\alpha]_D^{25} = -63.3^\circ$  (aq. N NaOH) (slow racemi-  
zation at room temp.). A soln. of 4 g.  $\alpha$ -poly-D-glutamic  
acid hydrazide (II) in 48 ml. 7N HCl was similarly treated.  
The properties of the  $\alpha$ -poly-D-glutamic acid (III) formed  
are the same as those of I, except for  $[\alpha]_D^{25} = 64.7^\circ$  (aq. N  
NaOH). II (300 mg.) was degraded to  $\alpha$ , $\gamma$ -diaminobutyric  
acid by the same procedure used for degrading the L-  
compd. previously. The properties of I and III, so dif-  
ferent from those of the natural poly-D-glutamic acid, sug-  
gest that  $\gamma$ -glutamyl bonds predominate in the natural  
product. *J. P. Daney*

*FSK*

BRUCKNER, V.

JUNG

A simple synthesis of optically pure  $\alpha$ -polyglutamic acid of the L- and D-series. V. Bruckner, K. Kovacs, J. Kovacs, and A. Kóta (Univ. Budapest). *Zapiski Akad. Nauk* 10, 160 (1954) (in German). Me  $\alpha$ -polyglutamate, either of the L- or D-series, can be saponified with 0.6N NaOH in the presence of freshly pptd. Cu(OH)<sub>2</sub>. No racemization occurs; the mean mol. wt. of the optically pure acids obtained was of the order of 13,000. D. S. Farmer

AS ref

BRUCKNER, V.

HUNG

Improved synthesis of optically pure L- and D-polyglutamide  
acid. V. Bruckner, K. Kovács, J. Kovács and A. Kóta (Acta  
Chim. Acad. Sci. Hung., 1968, 287-275). Methyl L- or D-polyglutamate  
(prepared from the Me ester of 2,4,2'-carboxyethylidenebisacetic acid  
2,5-dione) is converted into optically pure  $\alpha$ -polyglutamic acid  
by hydrolysis with 0.5N-NaOH in the presence of Cu<sup>II</sup> hydroxide  
by shaking the mixture for 3 hr, whereby the colour changes from  
greenish-blue to purple. Subsequent acidification with 1N-HCl  
of the bright complex formed (which protects the polypeptide from  
degradation) precipitates the optically pure  $\alpha$ -polyglutamic acid  
(C<sub>18</sub>H<sub>34</sub>O<sub>14</sub>N<sub>4</sub>) [α]<sub>D</sub><sup>25</sup> ± 77.3° in ~81.9% yield. This method of  
synthesis compares favourably with the acid hydrolysis of poly-  
glutamine in improving the yield, and gives products of higher  
mol. wt.

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RECORDED

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BRUCKNER, V.

X 15. Intramolecular alpha-gamma transpeptidation of  
N-acylated glutamyl peptides. I. (In German) — J.  
Kovács, K. Medzihorský, V. Bruckner.  
*Acta Chimica Academiae Scientiarum Hungaricae*  
Vol. 6, 1955, No. 1-2, pp. 183-189. 2 figs.)

It was found that by the action of acetic anhydride carbobenzoxy-gamma-L-glutamyl-glycine and carbobenzoxy-alpha-L-glutamyl-glycine were transformed into identical anhydro-compounds which upon partial hydrolysis yielded a mixture of the two compounds. A similar intramolecular transpeptidation occurred in the case of the structurally isomeric two carbobenzoxy-L-glutamyl-L-glutamic acids when upon partial hydrolysis of the bis-anhydro-compound the mixture of the two isomeric glutamic acids was obtained.

(2)

Bruckner, V.

17. On the beta-poly-DL-aspartic acid (In German) —  
V. Bruckner, T. Valde, J. Kovács. (*Acta  
Academiae Scientiarum Hungaricae* — Vol. 6,  
1955, No. 1—2, pp. 209—217)

Methods for the synthesis of monotonous omega-peptides in the series of naturally occurring alpha-aminodicarboxylic acids are not known. The significance of this problem was emphasized by the discovery of gamma-glutamyl bonds in native D-polyglutamic acid. Great difficulties were encountered in the attempted synthesis of the gamma-polyglutamic acid. The preparation of the beta-polyaspartic acid was however successfully effected by the following route. An oxazinedione derivative was prepared at first by treating alpha-ethyl-DL-aspartate with phosgene and in the next stage converting it into ethyl-beta-poly-DL-aspartate (I). The structure of this compound was confirmed by degradation. Finally beta-poly-DL-aspartic acid of 4670 average molecular weight was obtained by the alkaline hydrolysis of the polyester I. The compound readily dissolved in water and gave positive ninhydrin and biuret reactions.

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PM ~~SOH~~

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